POSTER SESSION

1145 Clinical Prognostic Factors in Acute Coronary Syndromes

Tuesday, March 19, 2002, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, Hall G
Presentation Hour: 10:00 a.m.-11:00 a.m.

1145-27 Is There Still a Role for Physician Assessment in the Emergency Department in the Era of Novel Cardiac Markers?

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Elevated serum levels troponin I (TnI), myosin light chain (MLC), and myoglobin (Mb) predict short term cardiac ischemic events in patients presenting to the Emergency Department (ED) with chest pain. The additive value of such markers with clinical assessment has not been assessed. In order to determine the additive predictive value of markers of myocardial injury with clinician judgement in predicting early ischemic events in patients presenting to the ED, we prospectively studied 247 patients presenting to 2 EDs within 24 hours of the onset of symptoms consistent with an acute coronary artery syndrome. After initial assessment, physicians estimated the probability of a major adverse cardiac event (MACE), consisting of death, myocardial infarction or ischemia driven revascularization within the initial week based on their initial history, physical examination and electrocardiogram (ECG). Serum samples were obtained for TnI, MLC, and Mb at presentation and in 4 hours. Physician decisions were made without the knowledge of the cardiac marker results. Mean age of the patient population was 52 ± 13 years and 54% of subjects were male. During follow-up, 1% died, 13% suffered an acute myocardial infarction, and 15% underwent coronary revascularization. Factors shown to predict events included ST-elevation (p<0.0001), QRS >120 msec (p=0.005), serial ECG changes (p=0.02), pathologic q-waves (p=0.05), an elevated serial TnI (p=0.006) or serial MLC level (p=0.008) and the physician estimate of increased risk (p<0.0001). In the multivariable analysis, only ST segment elevation at presentation, a QRS duration >120 msec, an elevated MLC and physician prediction of likelihood of cardiac events were independent predictors of MACE. A decision rule based solely on physician estimated probability of MACE and ECG findings had 96% sensitivity and 33% specificity for predicting MACE and was not improved by the addition of marker data. Although new cardiac markers of myocardial damage provide important information on short-term outcome, physician assessment still remains the most important predictor. Hence, use of cardiac markers should only be used in conjunction with physician assessment of cardiac risk.

1145-28 Validation of a Simple Electrocardiographic Criterion for Early Risk Assessment in Patients With Non-ST Segment Elevation Acute Myocardial Infarction

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Background: The prognostic significance of the location of ST segment depression in patients with non-ST elevation acute myocardial infarction (AMI) is controversial. We aimed to confirm the previous observation that ≥0.1 mV ST segment depression in ≥2 of the lateral leads I, aVL, V_5 and V_6 (STD_L) predicts a worse in-hospital outcome.
Methods: We analyzed 343 consecutive patients admitted to our center between 1996 and 1999 with a first AMI without Q waves or ≥0.1 mV ST segment elevation on admission.
Results: STD_L was the only variable from the initial ECG that was related to death after adjusting for baseline predictors (odds ratio: 5.3, 95% CI: 1.4 to 20.9, P<0.01), and was consistently associated with other adverse events:

Event rate (%)	No STD (n=147)	STD, non-lateral (n=82)	STD_L (n=114)
Death	1.4	1.2	14.9
Reinfarction	0.7	1.2	11.4
Angina with ST changes	10.2	9.8	29.8
Severe heart failure	2.0	3.7	32.5

Patients with STD_L had a similar CK-MB peak than the rest (116±12 vs. 134±10 mcg/l, respectively, P=NS). However, among the 176 patients that were catheterized before discharge, those with STD_L had lower left ventricular ejection fraction (61±2 vs. 68±1%, P=0.01) and more frequent left main or three-vessel disease than did the remaining patients (56 vs. 23%, P<0.001). Percutaneous intervention was carried out in 24 and 23% of patients with and without STD_L (P=NS), and surgical revascularization was indicated in 20 and 7%, respectively (P=0.001).
Conclusion: In patients with a first non-ST segment elevation acute MI, STD_L on admission is a simple and efficient criterion for early risk assessment, and its presence is related to extensive coronary artery disease.

1145-29 Value of Continuous Risk Stratification Early After Admission in Non-ST-Segment Elevation Acute Coronary Syndromes

Jorge M. Ferreira, Carlos Aguiar, Ana Timóteo, Katya Reis Santos, Ricardo Seabra-Gomes, *Department of Cardiology, Hospital de Santa Cruz, Carnaxide, Portugal.*

Background: Patients (P) with non-ST-segment elevation acute coronary syndromes (ACS) present a wide range of risk of death (D) or (re)-infarction (MI). As a great number of these events occur soon during evolution, early risk stratification is imperative. Nevertheless, after risk stratification at admission, the majority of P fall within a wide grey zone of intermediate risk. We sought to identify clinical variables and diagnostic methods predictive of D/MI at 30 days, in P classified initially as intermediate risk according to the TIMI Risk Score.
Methods: We studied 254 consecutive P with ACS. TIMI Risk Score was calculated on admission, and the sub-groups of P with high and intermediate risk of D/MI at 30 days were identified using the best cut-offs for the Score. In the sub-group of intermediate risk, we evaluated the prognostic value of clinical variables and diagnostic methods performed during the first 24 hours and not used in the TIMI Risk Score.
Results: The incidence of D/MI at 30 days was 9.8%. A TIMI Risk Score of 6 or 7 (19 P, 31.6% D/MI) or Score 5 (47 P, 14.9% D/MI) identified only a small group of P at high risk for D/MI (p=0.004). The remaining 188 P were classified as intermediate risk: Score 4 (76 P , 7.9% D/MI), Score 3 (62 P, 4.8% D/MI), Score 2 (35 P, 5.7% D/MI) and Score 0 or 1 (15 P, 6.7% of D/MI). The presence in the first 24 hours, of signs of heart failure (p=0.001), ST-segment shifts > 0.1mV detected by continuous ST-segment monitoring (p=0.002) or left ventricular ejection fraction (LVEF)<50% (p=0.012) were predictive of D/MI and identified 92% of these events. The absence of these findings was associated with the lowest risk (107 P, 0.9% D/MI) and the risk increased with the number of findings: 1 finding (53 P, 9.4% D/MI), 2 findings (24 P, 16.7% D/MI) and 3 findings (4 P, 50% D/MI).
Conclusion: Risk stratification at admission using the TIMI Risk Score identified only a small group of P at high risk for D/MI at 30 days. In the remaining P at intermediate risk, the presence of signs of heart failure, ST-segment shifts by continuous ST-segment monitoring or LVEF<50% identified the majority of those with D/MI.

1145-30 Abciximab Partially Attenuates Adverse Events Associated With Trombocytopenia: Analysis of GUSTO IV ACS

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Background: The development of thrombocytopenia (TCP) in patients with acute coronary syndromes (ACS) is associated with higher rates of major adverse clinical events (MACE) including death, MI and hemorrhage. Although the association between TCP and hemorrhage is apparent, the increased risk of MI and death in this group requires further study. The GUSTO IV - ACS trial was designed to assess the effects of abciximab on death or MI in non-ST segment elevation ACS patients without early intervention. There was no benefit with abciximab use and a trend toward increased MACE with longer infusion times in this setting. We hypothesized that prolonged infusions of abciximab might increase the occurrence of TCP and therefore lead to increased MACE.
Methods: We examined the occurrence of TCP (platelet count < 100 X 10^9/L and a 25% decrease from baseline) and its effect on MACE in the GUSTO IV - ACS patient population.
Results: The prevalence of TCP was 1.0 % in the placebo group, 4.7% in the 24 hour abciximab infusion group, and 7.0 % in the 48 hour abciximab infusion group (p= 0.001). The occurrence of adverse events in the three groups as a function of the presence or absence of TCP is tabulated below:

	PLACEBO			24 HR ABCIXIMAB			48 HR ABCIXIMAB		
	TCP (n=26)	NO TCP (n=2572)	p	TCP (n=121)	NO TCP (n=2469)	p	TCP (n=184)	NO TCP (n=2428)	p
Death or MI	26.9%	7.9%	0.003	10.7%	8.1%	0.306	12.5%	8.9%	0.110
Death, MI or Revasc.	53.8%	34.8%	0.061	33.1%	33.3%	1.000	35.9%	35.7%	1.000
Death	15.4%	3.8%	0.017	4.1%	3.4%	0.604	5.4%	4.2%	0.448
MI	19.2%	5.0%	0.009	6.6%	5.6%	0.548	9.2%	5.6%	0.050

Conclusion: TCP is associated with increased MACE in the placebo group, but this effect is blunted in the abciximab-treated groups. Although abciximab causes a higher rate of TCP, it also lessens the adverse events associated with TCP. The clinical significance and mechanism of these findings warrant further investigation.

1145-45 Underuse of Evidence-Based Medicine and Outcome of Acute Myocardial Infarction Patients With Renal Failure

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To evaluate the impact of renal failure upon management and outcome of MI patients we analyzed data of 1683 consecutive patients with acute MI admitted to 26 hospitals in Israel during a 2 month (2-3/2000) period. We compared clinical characteristics, management and outcome between 132 patients with renal failure (creatinine >1.3 mg/dl) vs. 1551 without (control) (Table). MI pts with CRF were more likely to die within 30d (OR=3.1 ; 95% CI 2.0-4.8). After adjustment for age and co-morbidities this association declined (OR=1.5; 95% CI 0.9-2.5). Adding thrombolysis and PCI into the statistical model did not affect the association between CRF and mortality. However, addition of

aspirin, beta-blockers and ACE-inhibitors markedly reduced it (OR= 1.1; 95% CI 0.63-1.9). **Conclusions:** MI pts with CRF are older, have more co-morbidities, present with higher Killip class and are more likely to experience complications and death. The underuse of evidence-based medicine may contribute to poor outcome and needs further evaluation.

Clinical chrectaristics, In-hospital procedures/therapies ,and complications

	Renal Failure n=132	No Renal Failure n=1551	P
Age,years (sd)	76 (11)	65 (14)	<0.001
Women	32 (24%)	419 (27%)	<0.5
Hypertension	83 (65%)	707 (46%)	<0.001
Diabetes	55 (43%)	477 (31%)	<0.006
Prior MI	54 (42%)	405 (27%)	<0.001
Killip>1 on admission	67 (51%)	357 (23%)	<0.001
Q wave MI	59 (45%)	962 (62%)	<0.001
Thrombolysis	20 (15%)	457 (30%)	<0.001
Coronary angio'	33 (26%)	703 (46%)	<0.001
PCI-in hospital	20 (16%)	434 (29%)	<0.002
Aspirin	106 (84%)	1479 (96%)	<0.001
ACE-inhibitors	49 (51%)	887 (63%)	<0.01
Beta-blockers	53 (54%)	1028 (74%)	<0.001
Heart failure	44 (36%)	308 (21%)	<0.001
Atrial fibrillation	20 (16%)	132 (9%)	<0.009
Sepsis	12 (9%)	42 (3%)	<0.001
Acute renal failure	80 (63%)	97 (6%)	<0.001

1145-46 **Chlamydia pneumoniae Infection and Classic Risk Factors in the Prediction of Acute Myocardial Infarction**

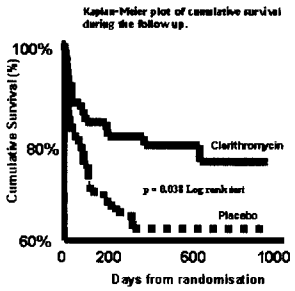
Kunihiro Kinjo, Hiroshi Sato, Hideyuki Sato, Issei Shiotani, Yozo Ohnishi, Daisaku Nakatani, Hiroya Mizuno, Eiji Hishida, Yasuhiko Matsu-ura, Yoshiyuki Kijima, Masatsugu Hori, *Osaka University Graduate School of Medicine, Suita, Japan.*

Background: Several seroepidemiologic studies have shown an association between Chlamydia pneumoniae infection and the presence of coronary artery disease (CAD) or the risk for acute coronary events. Since it has been suggested that C. pneumoniae infection can interact with several classic risk factors of CAD, C. pneumoniae infection may enhance the effect of classic risk factors on the onset of AMI.
Methods: The case group consisted of 607 patients with AMI. Control group consisted of 275 subjects without history of definite or suspected coronary heart disease who underwent medical examination. Total subjects were tested for specific C. pneumoniae IgG and IgA antibodies by ELISA and were also assessed for classic risk factors, i.e., age, sex, obesity, diabetes mellitus, hypertension, hyperlipidemia, low-HDL cholesterol, and smoking habit. Logistic regression model was used to identify an independent predictor of the onset of AMI.
Results: Prevalence of seropositivity for IgA antibody in the case group was significantly higher than in the control group (29% vs. 15%; p<0.01), but prevalence of seropositivity for IgG antibody was similar in the both groups (17% vs. 16%; p=0.73). In all study populations, seropositivity for IgA antibody was not an independent predictor of the onset of AMI by multivariate analysis (odds ratio, 1.49; 95% confidence interval, 0.90-2.45). However, subgroup analysis revealed that prevalence of seropositivity for IgA antibody was an independent predictor of the onset of AMI in patients of <60 years (2.39; 1.11-5.11), male patients (1.86; 1.09-3.17), patients with hyperlipidemia (2.42; 1.14-5.12), and smokers (1.85; 1.02-3.34).
Conclusion: C. pneumoniae infection enhances the effect of classic risk factors on the onset of AMI, especially in patients with hyperlipidemia and in smokers. Thus, measurement of IgA antibody to C pneumoniae may increase the predictive value of coronary risk factors for the onset of AMI.

1145-47 **Effect of Three-Month Antimicrobial Treatment With Clarithromycin in Acute Non-Q Wave Coronary Syndrome**

Juha P. Sinisalo, Kimmo J. Mattila, Ville Valtonen, Olli Anttonen, Jukka Juvonen, John Melin, Helena Vuorinen-Markkola, Markku S. Nieminen, CLARIFY-study group, *Helsinki University Central Hospital, Helsinki, Finland.*

Background: Coronary artery disease is accepted to be an inflammatory disease and infections have been postulated as one of the reasons for this inflammation. We investigated whether the antibiotic clarithromycin would reduce morbidity and mortality in patients presenting with an acute non-Q-wave coronary syndrome.
Methods: 148 patients with an acute non-Q-wave infarction or unstable angina were randomly assigned to receive double-blind treatment with either clarithromycin or placebo (74 patients in both groups) for 3 months. The primary endpoint was occurrence of the composite of death, myocardial infarction, or refractory ischemia during the treatment; the secondary endpoint was occurrence of any cardiovascular event during the whole follow up (average 555 days, range 138 to 924 days).
Results: There was a trend towards fewer patients meeting the endpoint criteria in the clarithromycin group when compared with placebo group (11 vs. 19 patients, respectively; Cox regression analysis risk ratio 0.54; 95% CI 0.25-1.14; p=0.10) during the 3 months medication. By the end of the whole follow up period, 16 patients in the clarithromycin group and 27 patients in the placebo group experienced any cardiovascular event (risk ratio 0.49; 95% CI 0.26-0.92; p=0.03).
Conclusion: Clarithromycin seems to reduce the risk of ischemic cardiovascular events in patients presenting with an acute non-Q-wave infarction or unstable angina. No signs of this effect becoming smaller were observed during the follow up.



1145-48 **Deterioration of Risk Factors Is Not a Major Determinant of Coronary Events in Depressive Patients With Acute Myocardial Infarction**

Issei Shiotani, Hiroshi Sato, Hideyuki Sato, Kunihiro Kinjo, Daisaku Nakatani, Hiroya Mizuno, Eiji Hishida, Yozo Ohnishi, Seiki Nagata, Noritake Houki, Masatsugu Hori, *Osaka University, Suita, Japan.*

Background: It has been reported that depressive symptoms increase a risk for cardiac events and worsen clinical outcomes both in healthy subjects and in patients with acute myocardial infarction (AMI). However, mechanisms in which depressive symptoms cause coronary events have not been elucidated. The aim of the present study is to test a hypothesis that depression deteriorates coronary risk factors and hence increases a risk for coronary event in normal subjects and in patients with AMI. **Methods:** Of consecutive 1229 patients with AMI were registered to Osaka Acute Coronary Insufficiency Study from September 1999 through January 2001, 854 patients who survived and discharged from hospital without any clinical disabilities were enrolled in this study (670 men; mean age 64±11 y.o). Healthy subjects were selected from outpatient clinic for medical checkup (n=1083; 627 men; mean age 49±10 y.o). Depression was assessed using the Zung Self-Rating Depression Scale (SDS). Subject with a score of 40 or higher was diagnosed as depression. **Results:** The SDS score identified depression in 276 healthy subjects (25.5%) and 361 patients (42.3%) with AMI (p<0.0001). Prevalence of depression was associated with women (p=0.071) and young population (p=0.065) in healthy subjects, however was not associated with other coronary risk factors. Whereas in patients with AMI, prevalence of depression was not dependent of age, gender, severity of myocardial infarction (Killip class, number of disease vessels, peak-CK), and coronary risk factors except diabetes mellitus. Multiple logistic regression analyses showed that depressive status in patients with AMI was significantly associated with 1-year cardiac events (odds ratio 1.45, 96%CI 1.03-2.04, p=0.036), after controlling coronary risk factors, e.g. diabetes mellitus, hypertension, hypercholesterolemia, smoking, gout, and obesity. **Conclusion:** Depression does not deteriorate coronary risk factors in healthy subjects. Furthermore, depression is an independent predictor of 1-year cardiac event after controlling risk factors, indicating that deterioration of risk factors may not be a major determinant of coronary events in depressive population.

POSTER SESSION

1146 Prediction of Risk in Acute Myocardial Infarction

Tuesday, March 19, 2002, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, Hall G
Presentation Hour: 10:00 a.m.-11:00 a.m.

1146-31 **BNP Identifies Patients With Optimal Reperfusion After PTCA for Acute Myocardial Infarction**

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Background : Brain Natriuretic Peptide evaluate the effect of revascularization on (BNP) is an hormone synthesized by ventricular myocytes, which has been reported to be increased during acute myocardial infarction (AMI). In order to the level of BNP, we measured its concentration in 60 consecutive patients hospitalized for AMI. They were classified into Group A : patients in which PTCA restore Timi III flow in the infarct-related artery (N = 54), and Group B (N=6) : patients in which no successful PTCA was performed.
Methods: BNP was measured every 30 minutes during the first 4 hours after admission and every 2 hours during the next 12 hours. BNP was measured using the IRMA test (Cis Bio laboratories). Reperfusion was performed by angioplasty with direct stenting and was effective in all 240 ± 30 minutes after the onset of chest pain.
Results: in Group A , average BNP measured level fell 30 minutes after restoration of TIMI 3 flow in the infarct-related artery. The relative variation of the mean level after PTCA was – 58 % ± 16%, p < 0.0001). In Group B there was no significant variation of BNP.
Conclusion: Decrease in the level of plasma BNP appears to be a clinically relevant biological marker of reperfusion during acute AMI.